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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,832	12/02/2003	Paul Bernard Green	23742-013	2796

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EXAMINER

MARTINEZ, DAVID E

ART UNIT PAPER NUMBER

2181

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/724,832	Applicant(s) GREEN, PAUL BERNARD	
	Examiner David E. Martinez	Art Unit 2181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 4/22/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 6, 7 and 9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The limitations in claims 6 and 7 directed to the data items having predetermined places reserved within the first and second buffers do not seem to be disclosed and thus are not supported by the specification.

As per claim 9, the it calls for a transfer being inhibited if only some of the corresponding items in the 2nd buffer have been read, but the specification calls for inhibiting the transfer if the corresponding in the 2nd buffer has not been read at all by a process [specification page 2 lines 16-22] and thus the claim language not being consistent nor being supported by the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-14 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No. 6,449,671 to Patkar et al. (hereinafter Patkar).

1. With regards to claim 1, Patkar teaches a data transfer apparatus [fig 2 element 40] for controlling the provision of data to a data processor [fig 2 elements 12 or 14 or 16] where the data comprises at least two data items [fig 2 data inside cache memory elements 42, 44, or 46, column 4 lines 36-40] having a predetermined temporal relationship [fig 2 elements 12, 14, 16 are buffers which hold data temporarily], the apparatus characterised by:

a first buffer [fig 2 element 42] for receiving data [fig 2 element 50] from sources of data [column 3 line 34 to column 4 line 7] and including markers to indicate that a data item associated with the marker has been modified [column 4 lines 35-52]; and

a data flow controller [fig 2 element 12] responsive to the markers and to a data association instruction specifying the data items which have a temporal relationship such that the data flow controller only allows a group of data items [fig 2 element 50] having a predetermined temporal relationship to be read from the first buffer [fig 2 element 42] when the items in the group satisfy the predetermined temporal relationship [column 4 lines 8-52].

2. With regards to claim 2, Patkar teaches a data transfer apparatus as claimed in claim 1, further comprising a second buffer [fig 2 element 44], and wherein a data item [fig 2 element 50] is transferred [fig 2 element 52 'victim flush operation] from the first buffer [fig 2 element 42] to the second buffer [fig 2 element 44] only when the data item satisfies any temporal constraints associated with it [column 4 lines 8-52].

3. With regards to claim 3, Patkar teaches a data transfer apparatus as claimed in claim 2, in which the second buffer includes markers to indicate when a data item associated with the marker is modified [column 4 lines 35-52 discloses data in a cache sets a dirty bit when data is modified].

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4. With regards to claim 4, Patkar teaches a data transfer apparatus as claimed in claim 1, in which the markers of the first buffer are set when an associated data item is written to the buffer and cleared when the associated data item is read from the first buffer [column 4 lines 8-52].

5. With regards to claim 5, Patkar teaches a data transfer apparatus as claimed in claim 3, in which the markers of the second buffer are set when an associated data item is written to the second buffer and cleared when the associated data is read from the second buffer [column 4 lines 8-52].

6. With regards to claim 6, Patkar teaches a data transfer apparatus as claimed in claim 1, in which specific data items have predetermined place reserved within the first buffer [column 4 lines 8-52, cache element 42 is allocated to be used by processor 12, and the cache itself is reserved for the data being used by processor 12].

7. With regards to claim 7, Patkar teaches a data transfer apparatus as claimed in claim 2, in which specific data items have predetermined place within the second buffer [column 4 lines 8-52, data being transferred into cache element 44 is stored into allocated memory set aside for processor 12 to use].

8. With regards to claim 8 Patkar teaches a data flow controller as claimed in claim 6, in which the data items which are temporally associated with each other form a group of data items, and data items which form a group have contiguous positions within the first buffer [fig 2 element 50 has the dirty bit associated with the rest of the data form the cache line (a group of data items) which are shown having contiguous positions in the buffer element, column 4 lines 8-52].

9. With regards to claim 9, Patkar teaches a data transfer apparatus as claimed in claim 2 in which the transfer of a group of temporally related items from the first buffer to the second

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buffer is inhibited if only some of the corresponding items in the second buffer have been read by a sink process [column 4 lines 8-52, the transfer of cache line element 50 into buffer 44 is inhibited if processor 14 is unable to accept the data because of it's need to process the data (it's need for it's memory – sink process)].

10. With regards to claim 10, Patkar teaches a data transfer apparatus as claimed in claim 2, in which the first buffer is N items deep and has N markers, the second buffer is M items deep and has M markers, and N equals M [fig 2 elements 42, 44 and 46 are cache memories that are partitioned into 5 "way" elements 48 each. Each way holds 3 cache lines, and each cache line has a dirty bit place].

11. With regards to claim 11, it is of the same scope as claim 1 above and thus is rejected under the same rationale.

12. With regards to claim 12, it is of the same scope as claim 2 above and thus is rejected under the same rationale.

13. With regards to claim 13, it is of the same scope as claim 3 above and thus is rejected under the same rationale.

14. With regards to claim 14, it is of the same scope as claim 4 above and thus is rejected under the same rationale.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The references below are directed to data in buffers having an associated bit or field disclosing corresponding data being modified in order to keep data coherency.

US Patent Application Publication No. US 20050138292A1 to Sullivan.

US Patent No.6,349,369 to Arimilli et al.

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US Patent No. 6,240,491 to Abily et al.

US Patent No. US005297269A to Donaldson et al.

US Patent No. 5,974,516 to Qureshi.

US Patent No. 6,389,489 to Stone et al.

US Patent Application Publication No. US 20020065991A1 to Fortuna et al.

US Patent No. 5,829,032 to Komuro et al.

US Patent No. 5,029,070 to McCarthy et al.

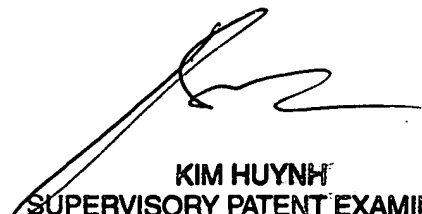
US Patent No. 5,197,146 to LaFetra.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Martinez whose telephone number is (571) 272-4152. The examiner can normally be reached on 8:30-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Huynh can be reached on (571) 272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DEM


KIM HUYNH
SUPERVISORY PATENT EXAMINER
2/16/06